

DEPARTMENT OF CONSUMER AND INDUSTRY SERVICES**DIRECTOR'S OFFICE****OCCUPATIONAL HEALTH STANDARDS**

Filed with the Secretary of State on **January 1, 1975**

These rules take effect 15 days after filing with the Secretary of State

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PART 664. TELECOMMUNICATIONS INDUSTRY**Rule 6701 Telecommunications Industry**

(1) Application.

(a) This rule sets forth safety and health standards that apply to the work conditions, practices, means, methods, operations, installations and processes performed at telecommunications centers and at telecommunications field installations, which are located outdoors or in building spaces used for such field installations. "Center" work includes the installation, operation, maintenance, rearrangement, and removal of communications equipment and other associated equipment in telecommunications switching centers. "Field" work includes the installation, operation, maintenance, rearrangement, and removal of conductors and other equipment used for signal or communication service, and of their supporting or containing structures, overhead or underground, on public or private rights of way, including buildings or other structures. [1910.268(a)(1)]

(b) These standards do not apply to installations under the exclusive control of electric utilities used for the purpose of communications or metering, or for generation, control, transformation, transmission, and distribution of electric energy, which are located in buildings used exclusively by the electric utilities for such purposes, or located outdoors on property owned or leased by the electric utilities or on public highways, streets, roads, etc., or outdoors by established rights on private property. [1910.268(a)(2)(ii)]

(2) Definitions.

(a) "Aerial tent" means a small tent usually constructed of vinyl-coated canvas which is usually supported by light metal or plastic tubing. It is designed to protect employees in inclement weather while working on ladders, aerial splicing platforms, or aerial devices. [1910.268(s)(3)]

(b) "Communication lines" mean the conductors and their supporting or containing structures for telephone, telegraph, railroad signal, data, clock, fire, police-alarm, community television antenna and other systems which are used for public or private signal or communication service, and which operate at potentials not exceeding

400 volts to ground or 750 volts between any two points of the circuit, and the transmitted power of which does not exceed 150 watts. When communications lines operate at less than 150 volts to ground, no limit is placed on the capacity of the system. Specifically designed communications cables may include communication circuits not complying with the preceding limitations, where such circuits are also used incidentally to supply power to communication equipment. [1910.268(s)(11)]

(c) "Ground tent" means a small tent usually constructed of vinylcoated canvas supported by a metal or plastic frame. Its purpose is to protect employees from inclement weather while working at buried cable pedestal sites or similar locations. [1910.268(s)(18)]

(d) "Joint use" means the sharing of a common facility, such as a manhole, trench or pole, by two or more different kinds of utilities (e.g., power and telecommunications). [1910.268(s)(24)]

(e) "Manhole" means a subsurface enclosure which personnel may enter and which is used for the purpose of installing, operating, and maintaining submersible equipment and/or cable. [1910.268(s)(27)]

(f) "Microwave transmission" means the act of communicating or signaling utilizing a frequency between 1 GHz (gigahertz) and 300 GHz inclusively. [1910.268(s)(29)]

(g) "Qualified employee" means any worker who by reason of his training and experience has demonstrated his ability to safely perform his duties. [1910.268(s)(33)]

(h) "Telecommunications center" means an installation of communication equipment under the exclusive control of an organization providing telecommunications service, that is located outdoors or in a vault, chamber, or a building space used primarily for such installations.

NOTE—Telecommunication centers are facilities established, equipped and arranged in accordance with engineered plans for the purpose of providing telecommunications service. They may be located on premises owned or leased by the organization providing telecommunication service, or on the premises owned or

leased by others. This definition includes switch rooms (whether electromechanical, electronic, or computer controlled), terminal rooms, power rooms, repeater rooms, transmitter and receiver rooms, switchboard operating rooms, cable vaults, and miscellaneous communications equipment rooms. Simulation rooms of telecommunication centers for training or developmental purposes are also included. [1910.268(s)(37)]

(i) "Telecommunication service" means the furnishing of a capability to signal or communicate at a distance by means such as telephone, telegraph, police and fire-alarm, community antenna television, or similar system, using wire, conventional cable, coaxial cable, wave guides, microwave transmission, or other similar means. [1910.268(s)(40)]

(j) "Unvented vault" mean an enclosed vault in which the only openings are access openings. [1910.268(s)(41)]

(k) "Vault" means an enclosure above or below ground which personnel may enter and which is used for the purpose of installing, operating, and/or maintaining equipment and/or cable which need not be of submersible design. [1910.268(s)(42)]

(l) "Vented vault" means an enclosure as described in paragraph (k) of this subsection, with provision for air changes using exhaust flue stack(s) and low level air intake(s), operating on differentials of pressure and temperature providing for airflow. [1910.268(s)(43)]

(3) General Requirements.

(a) Battery handling.

(i) Eye protection devices which provide side as well as frontal eye protection for employees shall be provided when measuring storage battery specific gravity or handling electrolyte, and the employer shall ensure that such devices are used by the employees. The employer shall also ensure that acid resistant gloves and aprons shall be worn for protection against spattering. Facilities for quick drenching or flushing of the eyes and body shall be provided unless the storage batteries are of the enclosed type and equipped with explosion proof vents, in which case sealed water rinse or neutralizing packs may be substituted for the quick drenching or flushing facilities. Employees assigned to work with storage batteries shall be instructed in emergency procedures such as dealing with accidental acid spills. [1910.268(b)(2)(i)]

(ii) Electrolyte (acid or base, and distilled water) for battery cells shall be mixed in a well ventilated room. Acid or base shall be poured gradually, while stirring, into the water. Water shall never be poured into concentrated (greater than 75 percent) acid solutions. Electrolyte shall never be placed in metal containers nor stirred with metal objects. [1910.268(b)(2)(ii)]

(iii) When taking specific gravity readings, the open end of the hydrometer shall be covered with an acid resistant material while moving it from cell to cell to avoid splashing or throwing the electrolyte. [1910.268(b)(2)(iii)]

(b) Illumination.

(i) Buildings. Lighting in telecommunication centers

shall be provided in an adequate amount such that continuing work operations, routine observations, and the passage of employees can be carried out in a safe and healthful manner. Certain specific tasks in centers, such as splicing cable and the maintenance and repair of equipment frame lineups, may require a higher level of illumination. In such cases, the employer shall install permanent lighting or portable supplemental lighting to attain a higher level of illumination shall be provided as needed to permit safe performance of the required task. [1910.268(b)(1)(i)]

(ii) Field work. Whenever natural light is insufficient to adequately illuminate the worksite, artificial illumination shall be provided to enable the employee to perform the work safely. [1910.268(b)(8)]

(c) Medical and first aid.

(i) First aid supplies recommended by a consulting physician shall be placed in weatherproof containers (unless stored indoors) and shall be easily accessible. Each first aid kit shall be inspected at least once a month. Expended items shall be replaced. [1910.268(b)(3)]

(ii) For specific standards supplementing these medical and first aid requirements - see Rule 6610.

(iii) For specific first aid standards relative to joint power and telecommunication manholes - see Rule 6701(5)(e).

(d) Training. Employers shall provide training in the various precautions and safe practices described in this rule and shall insure that employees do not engage in the activities to which this rule applies until such employees have received proper training in the various precautions and safe practices required by this rule. However, where the employer can demonstrate that an employee is already trained in the precautions and safe practices required by this rule prior to his employment, training need not be provided to that employee in accordance with this rule. Where training is required, it shall consist of on-the-job training or classroom-type training or a combination of both. The training program shall include a list of the subject courses and the types of personnel required to receive such instruction. A written description of the training program and a record of employees who have received such training shall be maintained for the duration of the employee's employment and shall be made available upon request to the Director, Department of Public Health. Such training shall, where appropriate, include the following subjects: [1910.268 (c)]

(i) Recognition and avoidance of dangers relating to encounters with harmful substances, and animal, insect, or plant life. [1910.268(c)(1)]

(ii) Procedures to be followed in emergency situations, and [1910.268(c)(2)]

(iii) First aid training, including instruction in artificial respiration. [1910.268(c)(3)]

(4) Personal Protective Equipment and Tools.

(a) Personal protective equipment, protective devices and special tools needed for the work of employees shall

be provided and the employer shall ensure that they are used by employees. Before each day's use the employer shall ensure that these personal protective devices, tools, and equipment are carefully inspected by a competent person to ascertain that they are in good condition. [1910.268(e)]

(b) Tent heaters. Flame-type heaters may not be used within ground tents or on platforms within aerial tents unless adequate ventilation is provided to maintain safe oxygen levels and avoid harmful buildup of combustion products and combustible gases. [1910.268(i)(3)(ii)]

(c) Torches. Torches may be used on aerial splicing platforms or in buckets enclosed by tents provided the tent material is constructed of fire resistant material and the torch is turned off when not in actual use. Aerial tents shall be adequately ventilated while the torch is in operation. [1910.268(i)(4)]

(d) Respiratory protection. For specific standards - see Rule 6501(3).

(5) Control Methods for Underground Lines.

(a) Scope. The provisions of this subsection apply to the guarding of manholes and street openings, and to the ventilation and testing for gas in manholes and unvented vaults, where telecommunications field work is performed on or with underground lines. [1910.268(o)]

(b) Employee protection in public work areas.

(i) Before work is begun in the vicinity of vehicular or pedestrian traffic which may endanger employees, warning signs and/or flags or other traffic control devices shall be placed conspicuously to alert and channel approaching traffic. Where further protection is needed, barriers shall be utilized. At night, warning lights shall be prominently displayed, and excavated areas shall be enclosed with protective barricades. [1910.268(d)(1)]

(ii) When covers of manholes or vaults are removed, the opening shall be promptly guarded by a railing, temporary cover, or other suitable temporary barrier which is appropriate to prevent an accidental fall through the opening and to protect employees working in the manhole from foreign objects entering the manhole. [1910.268(o)(1)(i)]

(c) While work is being performed in the manhole, a person with basic first aid training shall be immediately available to render assistance if there is cause for believing that a safety hazard exists, and if the requirements contained in subparagraphs (b)(i) and (b)(ii) of this subsection do not adequately protect the employee(s). Examples of manhole worksite hazards which shall be considered to constitute a safety hazard include, but are not limited to: [1910.268(o)(1)(ii)]

(i) Manhole worksites where safety hazards are created by traffic patterns that cannot be corrected by provisions of subparagraph (b)(i) of this subsection. [1910.268(o)(1)(ii)(A)]

(ii) Manhole worksites that are subject to unusual water hazards that cannot be abated by conventional means. [1910.268(o)(1)(ii)(B)]

(iii) Manhole worksites that are occupied jointly with power utilities as described in paragraph (e) of this subsection. [1910.268(o)(1)(ii)(C)]

(d) Requirements prior to entering manholes and unvented vaults.

(i) Before an employee enters a manhole, the following steps shall be taken: [1910.268(o)(2)(i)]

(A) The internal atmosphere shall be tested for combustible gas and, except when continuous forced ventilation is provided, the atmosphere shall also be tested for oxygen deficiency. [1910.268(o)(2)(i)(A)]

(B) When unsafe conditions are detected by testing or other means, the work area shall be ventilated and otherwise made safe before entry. [1910.268(o)(2)(i)(B)]

(ii) An adequate continuous supply of air shall be provided while work is performed in manholes under any of the following conditions: [1910.268(o)(2)(ii)]

(A) Where combustible or explosive gas vapors have been initially detected and subsequently reduced to a safe level by ventilation, [1910.268(o)(2)(ii)(A)]

(B) Where organic solvents are used in the work procedure, [1910.268(o)(2)(ii)(B)]

(C) Where open flame torches are used in the work procedure, [1910.268(o)(2)(ii)(C)]

(D) Where the manhole is located in that portion of a public right of way open to vehicular traffic and/or exposed to a seepage of gas or gases, or [1910.268(o)(2)(ii)(D)]

(E) Where a toxic gas or oxygen deficiency is found. [1910.268(o)(2)(ii)(E)]

(iii)

(A) The requirements of subparagraphs (d)(i) and (ii) of this subsection do not apply to work in central office cable vaults that are adequately ventilated. [1910.268(o)(2)(iii)(A)]

(B) The requirements of subparagraphs (d)(i) and (ii) of this subsection apply to work in unvented vaults. [1910.268(o)(2)(iii)(B)]

(e) Joint power and telecommunication manholes. While work is being performed in a manhole occupied jointly by an electric utility and a telecommunication utility, an employee with basic first aid training shall be available in the immediate vicinity to render emergency assistance as may be required. The employee whose presence is required in the immediate vicinity for the purposes of rendering emergency assistance is not to be precluded from occasionally entering a manhole to provide assistance other than in an emergency. The requirement of this paragraph (e) does not preclude a qualified employee, working alone, from entering for brief periods of time a manhole where energized cables or equipment are in service, for the purpose of inspection, housekeeping, taking readings, or similar work if such work can be performed safely. [1910.268(o)(3)]

(6) Microwave transmission.

(a) Eye protection. Employers shall insure that employees do not look into an open waveguide which is connected to an energized source of microwave radiation.

[1910.268(p)(1)]

(b) Hazardous area. Accessible areas associated with microwave communication systems where the electromagnetic radiation level exceeds the radiation protection guide given in Rule 2420 (Michigan Occupational Health Standards for General Industry) shall be posted as described in that rule. The lower half of the warning symbol shall include the following:

Radiation in this area may exceed hazard limitations and special precautions are required. Obtain specific

instruction before entering. [1910.268(p)(2)]

(c) Protective measures. When an employee works in an area where the electromagnetic radiation exceeds the radiation protection guide, the employer shall institute measures that insure that the employee's exposure is not greater than that permitted by the radiation guide. Such measures shall include, but not be limited to, those of an administrative or engineering nature or those involving personal protective equipment. [1910.268(p)(3)]